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(54) Title: STORAGE AND AUTHENTICATION OF DATA TRANSACTIONS

(57) **Abstract:** The various aspects of the present invention are based on four main principles: the provision, protection and validation of audit trails relating to data generated by and communicated between nodes of a network; authentication of communicating parties; enforcement of proof of receipt of data communications; and the detection of compromised user identifiers. The object of these principles being that, should a dispute arise over the substance of an authenticated e-mail or other data item, it would be possible to prove, with mathematical precision, the following features of the communication: the content of the message sent; the e-mail location to which the message was addressed; the fact that the message was despatched; the time and date of despatch; the fact that the message was received; the time and date it was received; and the fact that the content of the message had not been changed since it was sent. It is also intended to make it possible to prove the identity of the sender and the identity of the recipient.